

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1-40. (canceled)

41. (currently amended) A purified or isolated nucleic acid molecule comprising a ~~5' portion of an intestinal lactase-phlorizine hydrolase (LPH) gene contributing to or indicative of adult-type hypolactasia wherein said~~ nucleic acid molecule is sequence selected from the group consisting of:

(a) ~~a nucleic acid molecule having or comprising the nucleic acid sequence of SEQ ID NO:1, the sequence of SEQ ID NO:1, SEQ ID NO:3, or SEQ ID NO:5; and is also depicted in Fig. 4 and comprised in the sequence as depicted in Fig. 8~~

(b) ~~a nucleic acid molecule having or comprising the nucleic acid sequence of SEQ ID NO:2, the sequence of SEQ ID NO:2 is also depicted in Fig. 5 and comprised in the sequence as depicted in Fig. 9;~~

(c) ~~a nucleic acid molecule of at least 20 nucleotides the complementary strand of which hybridizes under stringent conditions to the nucleic acid molecule of (a) or (b), wherein said polynucleotide has at a position corresponding to position -13910 5' from the LPH gene a cytosine residue; and~~

(d) ~~a nucleic acid molecule of at least 20 nucleotides the complementary strand of which hybridizes under stringent conditions to the nucleic acid molecule of (a) or (b), wherein said polynucleotide has at a position corresponding to position -22018 5' from the LPH gene a guanine residue wherein said~~

23                                ~~nucleic molecule extends, at a maximum, 30000 nucleotides~~  
24                                ~~over the 5' and/or 3' end of the nucleic acid molecule the~~  
25                                complementary sequence of SEQ ID NO:1, SEQ ID NO:3, or SEQ  
26                                ID NO:5 or 2, respectively.

1                                42.        (canceled)

1                                43.        (currently amended) The nucleic acid molecule of claim 41, ~~or 42 which~~  
2                                wherein said nucleic acid molecule is genomic DNA.

1                                44.        (currently amended) The nucleic acid molecule of claim 43, wherein said  
2                                genomic DNA is part of a gene.

1                                45-47. (canceled)

1                                48.        (currently amended) A vector comprising the nucleic acid molecule of  
2                                ~~claims claim~~ claim 41 ~~or 42~~.

1                                49-50. (canceled)

1                                51.        (currently amended) [[A]] An isolated ~~non-human~~ host cell transformed  
2                                with the vector of claim [[46]] 48.

1                                52.        (currently amended) The ~~non-human~~ host cell of claim 51, ~~which is~~  
2                                wherein said host cell is selected from the group consisting of a bacterium, a yeast cell, an insect  
3                                cell, a fungal cell, a mammalian cell, and a plant cell, ~~a transgenic animal or a transgenic~~  
4                                ~~plant~~.

1                                53-55. (canceled)

1                                56.        (currently amended) A diagnostic composition for diagnosing or  
2                                assessing an individual's predisposition to develop adult-type hypolactasia, comprising the  
3                                nucleic acid molecule of claim ~~41 or 42~~ 77.

1                   57-74. (canceled)

1                   75.     (currently amended) ~~[[Kit]]~~ A kit comprising the nucleic acid molecule of  
2 claim ~~41 or 42~~ 77.

1                   76.     (new) The nucleic acid molecule of claim 41, comprising SEQ ID NO:3  
2 or SEQ ID NO:5.

1                   77.     (new) The nucleic acid molecule of claim 76, consisting of a sequence of  
2 at least 14 consecutive nucleotides of SEQ ID NO:3, SEQ ID NO:5, or a complementary  
3 sequence thereof.

1                   78.     (new) The nucleic acid molecule of claim 77, wherein said sequence  
2 contains the nucleotide at position 324 of SEQ ID NO:3 or SEQ ID NO:5.

1                   79.     (new) The nucleic acid molecule of claim 77, wherein said sequence  
2 consists of from 14 to 24 nucleotides.

1                   80.     (new) The nucleic acid molecule of claim 77, wherein said sequence  
2 comprises a detectable label.

1                   81.     (new) The nucleic acid molecule of claim 80, wherein said detectable  
2 label is a fluorescent label.

1                   82.     (new) The nucleic acid molecule of claim 80, wherein said detectable  
2 label is a radioactive label.

1                   83.     (new) A purified or isolated polynucleotide of at least 20 nucleotides the  
2 complementary strand of which hybridizes under highly stringent conditions to the nucleic acid  
3 molecule of claim 41, wherein said polynucleotide contains the nucleotide at position 324 of  
4 SEQ ID NO:3 or SEQ ID NO:5.

1                   84.     (new) A primer, wherein the primer hybridizes under highly stringent  
2 conditions to the nucleic acid molecule of claim 41 and has a length of at least 14 nucleotides.

1                   85.     (new) A primer pair, wherein each primer in the primer pair hybridizes  
2 under highly stringent conditions to the nucleic acid molecule of claim 41 and has a length of at  
3 least 14 nucleotides.

1                   86.     (new) A kit comprising the nucleic acid molecule of claim 41.